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内山, 八郎
柳沢, 振一郎
鎌江, 伊三夫

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SMOKING STATUS OF JAPAN IN COMPARISON WITH SELECTED COUNTRIES IN THE WORLD

Hachiro Uchiyama [1)]
Shinichiro Yanagisawa [2)]
Isao Kamae [3)]

"Urbanization and Health" is one of the major concerns in the world. In this paper, smoking status of Japan is compared with the situations of many countries in the world, particularly in American and European regions. After examining the relevant data from Japan and the selected countries, policy-related issues are discussed with a view to reduce the smoking prevalence, as well as consumption.

Key words: smoking, prevalence, consumption, strategies

Introduction

In many parts of the world, urbanization is in progress. Japan is no exception in that, in 2000 for instance, 78.8 percent of the population in the country were urban dwellers, and, in 2010, it is expected that the counterpart will rise to 80.5 percent, according to the United Nations' projections. Even though urban settings may bring about certain advantages to the inhabitants, some of the urban factors, such as higher population density, may also increase risks for some of the public health problems. Smoking is one of such issues, for it is conceivable that higher population density, for example, could potentially increase the risks associated with secondhand smoking, not to mention many other consequences. In this paper, data and information on smoking and related illnesses are compared/contrasted in order to illuminate situations in Japan particularly in relation to those in American and European regions, as defined by the World Health Organization, and, moreover, possible policy options are proposed.

Method

In this paper, data and information from the World Health Organization's Tobacco or Health Programme are examined, analyzed, and utilized to situate smoking status of people in Japan in a worldwide context. However, the countries in European and American regions are given more focus than the others. The data and information that have been considered and/or processed include, for

example, (1) smoking prevalence (gender-specific and non gender-specific), (2) annual consumption of manufactured cigarettes per capita, and (3) annual death rates from diseases attributable to smoking, only to name a few. Furthermore, information on smoking-related policy has been obtained from the same source. In addition to the above, data and information from the Ministry of Health, Labour, and Welfare in Japan have been used for highlighting tendencies seen in the country with regard to smoking behaviors.

Results

Analyses 1: World Situations

First, data on smoking prevalence for 124 countries in the world have been utilized to reckon and illuminate the current status of Japan in relation to the rest of the represented countries. It should be noted that there is a variation as to when the data were gathered from the represented countries: for most countries, nevertheless, it was during the period of the late 1980's and early 1990's that the prevalence data were collected. The following tables (Table 1 and Table 2) summarize the descriptive statistics based on non-gender-specific as well as gender-specific smoking prevalence for the 124 countries.

Table 1 Descriptive Statistics on Smoking Prevalence in 124 Countries.

	Number of Countries	Range	Mean	Median
Non-Gender-Specific	124	73.45	31.4	31.75
Male	124	79.1	43.27	41.4
Female	124	69.5	19.52	19.05

Table 2 Lowest/Highest Prevalence and Japan's Status from a Global Standpoint.

	Country with the Highest Prevalence	Country with the Lowest Prevalence	Prevalence in Japan (%)	Japan's Ranking from the Highest	Percentile of Japan
Non-Gender Specific	Italy (77)	Slovakia (3.55)	34	45th	64th Percentile
Male	Nepal (85.4)	Ghana (6.3)	59	16th	87th Percentile
Female	Kiribati (70)	Turkmenistan (0.5)	15	78th	37th Percentile

In Table 1, it can be seen that men in many countries generally have higher prevalence than their female counterparts. While buttressing this tendency, it is quite clear in Table 2 that males in Japan have much higher smoking prevalence than females in the country: 59 percent for the former, and 15 percent for the latter. Moreover, the prevalence among males in Japan (59 %) is higher than its equivalent mean (43.27) and median (41.4) for the 124 countries; for females in Japan, in contrast, the prevalence (15 %) is lower than the mean (19.52) and the median (19.05). In addition, 87 percent of the represented 124 countries are ranked below Japan in terms of smoking prevalence among males, whereas only 37 percent of the countries have female subpopulations among whom smoking prevalence is lower than Japanese females'.

From the above, it is unequivocal that, with a few exceptions, most countries, including Japan, show higher prevalence among males than females. This seems to be a global tendency. In effect, Canada (M 29; F 31), Nauru (M 53; F 59), Peru (M 36.8; F 41.5), and Sweden (M 22; F 24) are the only countries in which smoking prevalence among females surpassed that among men.

That a higher prevalence is observed among males than females in most countries is even more cogent in the following TS Scatter Plot, which visually presents the prevalence data to illuminate the gender-specific differences/similarities.

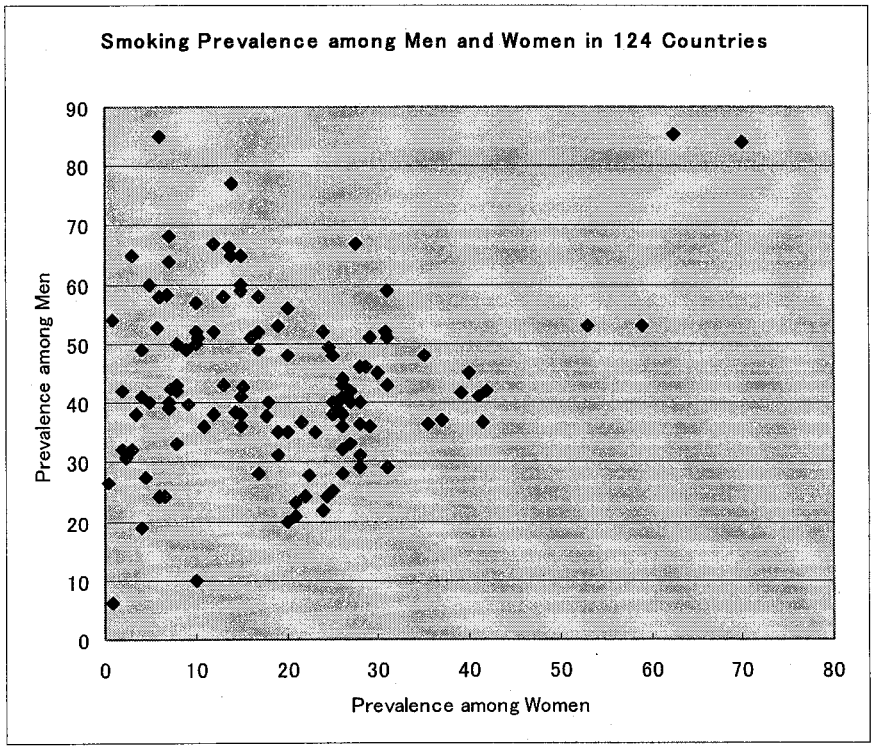

Figure 1 Gender-specific Smoking Prevalence in 124 Countries.

The second variable to be examined is annual consumption of manufactured cigarettes per capita. The pertinent data are available for 25 countries in African region, 25 countries in American region, 15 counties in Eastern Mediterranean region, 26 countries in European region, 8 countries in Southeast Asian region, and 12 countries in Western Pacific region. For these 111 countries, longitudinal data spanning the periods of 1970-1972, 1980-1982, and 1990-1992 for the aforementioned variable have been compared, particularly with the data of Japan. Since it is not practical and identifiable to have all of the 111 countries' data in a single graph, average annual consumption of manufactured cigarettes per capita has been reckoned for each region. The results are as shown in Table 3:

If one compares the average annual consumptions from the six regions with the equivalents of Japan, it can be seen, to say the least, that the latter has higher consumption numbers for all of the three periods than any of the regional average data. Within each region, nevertheless, there are countries, whose average annual consumptions are greater than Japan's. In American region, for instance, both Canada and the United States of America for the periods of 1970-1972 and 1980-1982 had higher annual per capita consumptions: 3,910 and 3,800 for Canada, and 3,700 and 3,560 for the United States, respectively. Notwithstanding these figures, both countries have successfully reduced the values to 2,540 (Canada) and 2,670 (USA) for the period of 1990-1992, whereas the counterpart for Japan was 3,240—only a slight decrease from 1980-1982 period. Moreover, it is noteworthy that both Canada and the United States have systematically and consistently reduced the average annual consumption per capita of manufactured cigarettes. In other words, during the period spanning 1970 and 1992, Canada has decreased the number of consumption by 1,370, whereas the US, likewise, lowered the variable by 1,030.

Table 3 Average Annual Consumption of Manufactured Cigarettes Per Capita.

	1970–1972	1980–1982	1990–1992
African Region	520	647	644
American Region	1,855	1,714	1,381
Eastern Mediterranean Region	1,128	1,505	1,462
European Region	2,378	2,507	2,331
Southeast Asian Region	575	773	839
Western Pacific Region	1,869	2,096	1,820
Japan	2,950	3,430	3,240

Similarly, in European region, there are countries with higher average annual consumptions than Japan's. For the period of 1970-1972, Belgium (3,090), Ireland (3,050), Luxembourg (3,090), Netherlands (3,150), Poland (3,010), Switzerland (3,700) and the United Kingdom of Great Britain and Northern Ireland (3,250) had values exceeding Japan's (2,950). For 1980-1982, however, there is only one country: Greece, with the average annual consumption of 3,440, while its Japanese counterpart was 3,430. For the period of 1990-1992, Greece (3,590), Hungary (3,260), and Poland (3,620) outnumbered Japan (3,240).

Nevertheless, when the average for European region is compared with the data of Japan, it is clear that Japan's amount of consumption is relatively high, despite the values held by the aforementioned European countries. It should also be noted that a number of countries in European region, concordant with American region, have successively lowered the average annual consumptions for the periods of 1970-1972, 1980-1982, and 1990-1992. Of such countries, the United Kingdom of Great Britain and Northern Ireland, and Luxembourg in particular show remarkable downsizing: i.e., the former unit reducing the amount by 1,040, the latter by 1,010 in the period spanning 22 years. Japan, on the other hand, showed a decrease between the periods 1980-1982 and 1990-1992 by 190, but an increase, in contrast, is observed when 1970-1972 and 1990-1992 data are taken into consideration: 2,950 for the first period, and 3,240 for the second period, or a raise by 290.

Smoking is long known to be a potential cause of a number of diseases, including various types of cancers as well as respiratory and cardiac disorders. According to the Centers for Disease Control and Prevention in the United States of America, for example, smoking caused 444,000 premature deaths during 1995-1999 in the country. The Average Annual Consumption of Manufactured Cigarettes Per Capita, as seen in the above, is an indicator, by which one may get an idea as to the smoking status of a given country. However, utilizing the variable in conjunction with data on disease-specific mortality may be even more revealing as to the relationship between the variables. Accordingly, Figure 2 is a TS Scatter-plot, which employs not only the Average Annual Consumption of Manufactured Cigarettes, but also mortality from all cancers, for 25 countries in European Region:

At a first glance, there seems to be a clear correlation between the two variables. That is, as the average annual consumption of manufactured cigarettes per capita increases, apparently, so does the mortality from all cancers. To examine the relationship between these two variables in more statistical manners, however, the two data sets for the 25 countries have been tested for correlations. First, the data as they appear in the above graph have been processed to reckon Pearson's correlation coefficient. Second, the data sets that have been ranked from 1 to 25 basing on each of the two variables are employed to test for Spearman correlation coefficients. The outcomes are shown in Table 4.

It can be seen in the above that the relationship between the two variables may not be concluded as statistically significant. Nonetheless, this is in no way a piece of evidence, which refutes the detrimental harm of smoking to human health.

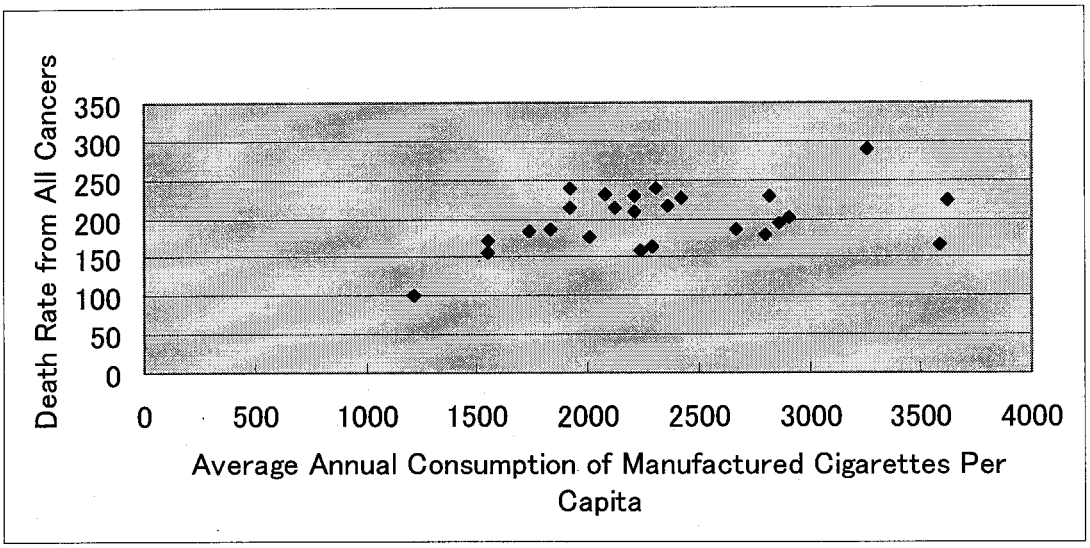

Figure 2 Average Annual Consumption of Manufactured Cigarettes Per Capita and Death Rate from All Cancers in Countries of European Region (1990s).

Table 4 Correlation Coefficients between Consumption and Cancer.

	Value	Asympt. Std. Error	Approx. T
Interval by Interval: Pearson's Correlation	0.414	0.200	2.178
Ordinal by Ordinal: Spearman Correlation	0.324	0.201	1.644
N of Valid Cases	25		

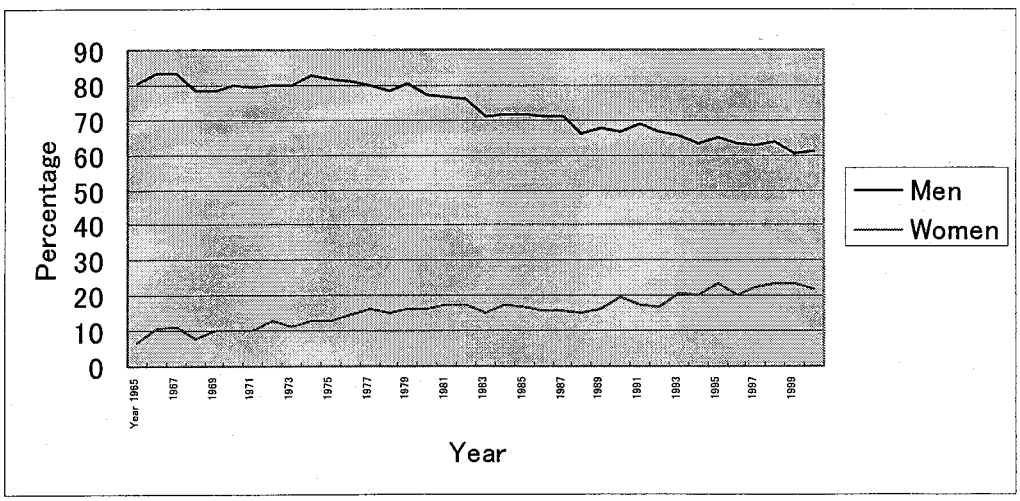

Figure 3 Time-series Change in Smoking Prevalence among Japanese People in 20's.

Analyses 2: Situations in Japan

In the preceding section, it was seen that Japan's smoking status is relatively higher than many countries' in the world. When the data that pertain exclusively to Japan are analyzed longitudinally and comparatively, it can be seen that certain sub-populations in the country have taken up smoking more than they used to or more than other groups. For instance, the following graph, shown in Figure 3, constructed applying the data from the Ministry of Health, Labour, and Welfare's website, delineates the increasing tendency of smoking among females in 20's.

The graph is a time-series one, stretching the years 1965 and 2000. Although the male sub-population has always had a higher smoking prevalence than women, the smoking prevalence among male counterparts is, in general, decreasing. In addition, despite Japan's relatively high smoking prevalence, most of the country's sub-populations such as males in 20's are reducing their prevalence rates, with a few exceptions. It is among females in 20's among whom smoking prevalence is showing an almost systematic increase. The smoking prevalence over time of Japanese people for all adult age groups may show overall tendencies of the country's smoking status. The graph in below was also made with the data from the Ministry of Health, Labour, and Welfare. In spite of the relative high prevalence in comparison with the worldwide data, males in Japan have systematically reduced their smoking prevalence, whereas the data for the female sub-population have generally been stable.

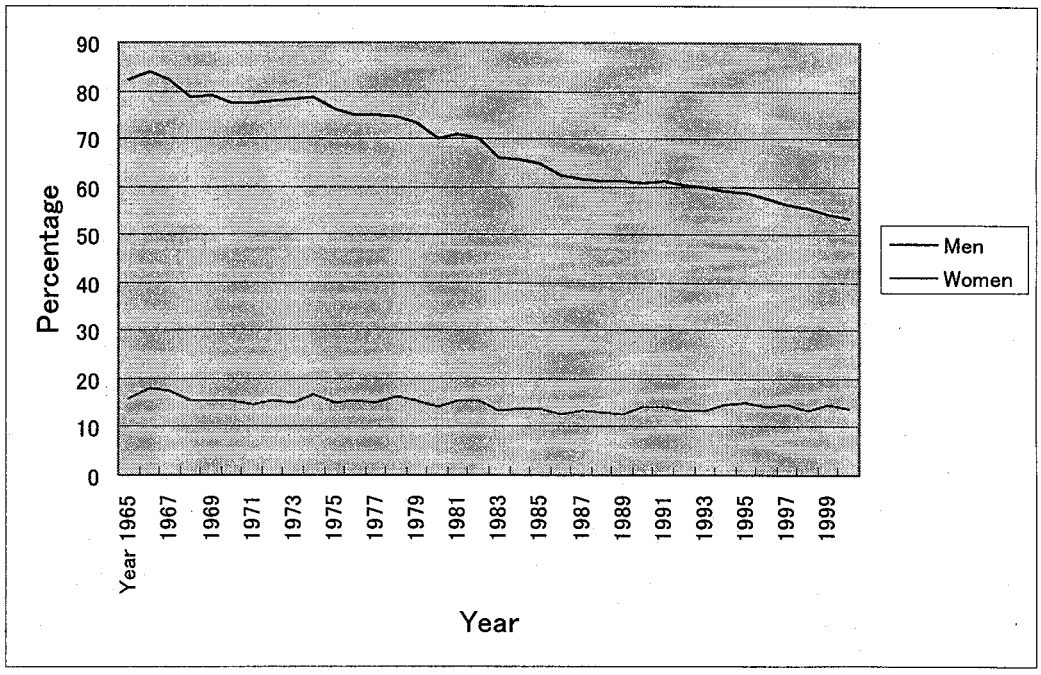

Figure 4 Time-series Change in Smoking Prevalence of Adults in Japan (1965-2000).

It is important to note, however, that female sub-population in Japan has always had a relatively low smoking prevalence, as compared to their male counterparts, even when the data are seen from a worldwide perspective.

For adults, once again, it is only among women in 20's that smoking prevalence is progressively and longitudinally increasing. Hence, it may be sensible to target not only the general population composed of all adult sub-populations with an emphasis on males, but also specifically females in 20's, if strategies to reduce smoking prevalence is to be implemented.

Policy Options and Current Situations in Japan

In order for a country to strategically reduce smoking prevalence, through which it may be possible in turn to decrease mortality rate, tobacco control needs to be implemented as policies. There are, for instance, various policy options that have been applied in a number of countries. The following is a list of several examples:

1. Total ban on direct advertisement
2. Total ban on indirect advertisement
3. Higher taxation
4. Ban on vending machines
5. Placement of direct rotating health warnings of a large size on packets
6. Smoking prohibition of smoking inside public buildings, hospitals, schools

Concluding Remarks

Japan has a higher prevalence of smoking among men than women. Since the majority of the country's labor force is composed of males (59.2% as of 2000), it may be effective to enforce restrictions on smoking in workplace. Japan has started, on 1 May 2003, a ban on cigarette smoking in facilities utilized by many people. For instance, schools, gymnasiums, hospitals, theaters, halls, shopping malls, offices, government buildings, restaurants, buses, taxis, stations, hotels, and airplanes are included in the designated facilities. Even though the law does not entail any penalty, its effects may, in the future, be seen to be potent in reducing smoking prevalence substantially.

One of the factors that are raising Japan's smoking prevalence may be the widespread vending machines. The presence of the vending machines often provides minors with a way to purchase and smoke cigarettes. It is conjectured that banning vending machines would be highly influential in reducing smoking prevalence. There have been a few trials in Japan at local level. In Izumo City of Shimane Prefecture, for example, 351 cigarette vending machines were banned in 1995. Moreover, in Fukaura Town in Aomori Prefecture, some of the tobacco vending machines were also removed. The

effects of these trials are still to be seen.

Higher taxation seems to benefit all, from the standpoint of health protection. Higher taxation leads to a raised price of cigarettes. In 1995, for instance, the price of a pack of cigarettes in Norway was 5.43 in U.S. Dollars. In Japan, for 1995, the price was less than the half and was 2.47 in the same currency. It would not be surprising to find that a raise in taxation, which in turn is expected to bring about an increased price of cigarettes, would be highly instrumental in reducing smoking prevalence as well as the average annual consumption of manufactured cigarettes per capita. Furthermore, the tax revenue resultant of the increased taxation on cigarettes could be spent for tobacco-related health problems.

As Sweden's case demonstrates, strategies to reduce harms resultant of smoking may be highly potent, if they are comprehensive and are targeting certain subpopulations. It has not been long, since Japan implemented the Health Promotion Law, banning cigarette smoking in many of the public places. The results are to be seen in years to come.

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Authors:

1) Research Fellow, Division of Health Informatics and Sciences, Kobe University School of Medicine.
2) Research Associate, Research Center for Urban Safety and Security, Kobe University.
3) Professor, Research Center for Urban Safety and Security, Kobe University.